

MATHEMATICS

Textbook for Class XI



11076

विद्यया ऽ मृतमश्नुते



एन सी ई आर टी
NCERT

राष्ट्रीय शैक्षिक अनुसंधान और प्रशिक्षण परिषद्
NATIONAL COUNCIL OF EDUCATIONAL RESEARCH AND TRAINING

11076 – MATHEMATICS

Textbook for Class XI

ISBN 81-7450-486-9

First Edition

February 2006 Phalguna 1927

Reprinted

October 2006, November 2007,
December 2008, December 2009,
January 2011, February 2012,
December 2012, November 2013,
December 2014, May 2016,
December 2016, December 2017,
January 2019, August 2019,
January 2021 and November 2021

Revised Edition

November 2022 Agrahayan 1944

PD 500T BS

© National Council of Educational
Research and Training, 2006, 2022

₹ 210.00

Printed on 80 GSM paper with NCERT
watermark

Published at the Publication Division by
the Secretary, National Council of
Educational Research and Training,
Sri Aurobindo Marg, New Delhi 110 016
and printed at Abhimaani Publications
Limited, Plot No. 2/4, Dr. Rajkumar
Road, Rajaji Nagar, Bengaluru - 560 010

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Foreword

The National Curriculum Framework (NCF), 2005, recommends that children's life at school must be linked to their life outside the school. This principle marks a departure from the legacy of bookish learning which continues to shape our system and causes a gap between the school, home and community. The syllabi and textbooks developed on the basis of NCF signify an attempt to implement this basic idea. They also attempt to discourage rote learning and the maintenance of sharp boundaries between different subject areas. We hope these measures will take us significantly further in the direction of a child-centred system of education outlined in the National Policy on Education (1986).

The success of this effort depends on the steps that school principals and teachers will take to encourage children to reflect on their own learning and to pursue imaginative activities and questions. We must recognise that given space, time and freedom, children generate new knowledge by engaging with the information passed on to them by adults. Treating the prescribed textbook as the sole basis of examination is one of the key reasons why other resources and sites of learning are ignored. Inculcating creativity and initiative is possible if we perceive and treat children as participants in learning, not as receivers of a fixed body of knowledge.

These aims imply considerable change in school routines and mode of functioning. Flexibility in the daily time-table is as necessary as rigour in implementing the annual calendar so that the required number of teaching days are actually devoted to teaching. The methods used for teaching and evaluation will also determine how effective this textbook proves for making children's life at school a happy experience, rather than a source of stress or boredom. Syllabus designers have tried to address the problem of curricular burden by restructuring and reorienting knowledge at different stages with greater consideration for child psychology and the time available for teaching. The textbook attempts to enhance this endeavour by giving higher priority and space to opportunities for contemplation and wondering, discussion in small groups, and activities requiring hands-on experience.

The National Council of Educational Research and Training (NCERT) appreciates the hard work done by the Textbook Development Committee responsible for this

book. We wish to thank the Chairperson of the advisory group in Science and Mathematics, Professor J.V. Narlikar and the Chief Advisor for this book Professor P.K. Jain for guiding the work of this committee. Several teachers contributed to the development of this textbook; we are grateful to their principals for making this possible. We are indebted to the institutions and organisations which have generously permitted us to draw upon their resources, material and personnel. We are especially grateful to the members of the National Monitoring Committee, appointed by the Department of Secondary and Higher Education, Ministry of Human Resource Development under the Chairpersonship of Professor Mrinal Miri and Professor G.P. Deshpande, for their valuable time and contribution. As an organisation committed to the systemic reform and continuous improvement in the quality of its products, NCERT welcomes comments and suggestions which will enable us to undertake further revision and refinement.

New Delhi
20 December 2005

Director
National Council of Educational
Research and Training

Rationalisation of Content in the Textbooks

In view of the COVID-19 pandemic, it is imperative to reduce content load on students. The National Education Policy 2020, also emphasises reducing the content load and providing opportunities for experiential learning with creative mindset. In this background, the NCERT has undertaken the exercise to rationalise the textbooks across all classes. Learning Outcomes already developed by the NCERT across classes have been taken into consideration in this exercise.

Contents of the textbooks have been rationalised in view of the following:

- Overlapping with similar content included in other subject areas in the same class
- Similar content included in the lower or higher class in the same subject
- Difficulty level
- Content, which is easily accessible to students without much interventions from teachers and can be learned by children through self-learning or peer-learning
- Content, which is irrelevant in the present context

This present edition, is a reformatted version after carrying out the changes given above.

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The Council gratefully acknowledges the valuable contributions of the following participants of the Textbook Review Workshop: P. Bhaskar Kumar, *P.G.T.*, Jawahar Navodaya Vidyalaya, Ananthpur, (A.P.); Vinayak Bujade, *Lecturer*, Vidarbha Buniyadi Junior College, Sakkardara Chowk Nagpur, Maharashtra; Vandita Kalra, *Lecturer*, Sarvodaya Kanya Vidyalaya Vikashpuri District Centre, New Delhi; P.L. Sachdeva Deptt. of Mathematics, Indian Institute of Science, Bangalore, Karnataka; P.K. Tiwari *Assistant Commissioner (Retd.)*, Kendriya Vidyalaya Sangathan; Jagdish Saran, Department of Statistics, University of Delhi; Quddus Khan, *Lecturer*, Shibli National P.G. College Azamgarh (U.P.); Sumat Kumar Jain, *Lecturer*, K.L. Jain Inter College Sasni Hathras (U.P.); R.P. Gihare, *Lecturer* (BRC), Janpad Shiksha Kendra Chicholi Distt. Betul (M.P.); Sangeeta Arora, *P.G.T.*, A.P.J. School Saket, New Delhi; P.N. Malhotra, *ADE* (Sc.), Directorate of Education, Delhi; D.R. Sharma, *P.G.T.*, J.N.V. Mungespur, Delhi; Saroj, *P.G.T.* Government Girls Sr. Secondary School, No. 1, Roop Nagar, Delhi; Manoj Kumar Thakur, *P.G.T.*, D.A.V. Public School, Rajender Nagar, Sahibabad, Ghaziabad (U.P.) and R.P. Maurya, *Reader*, DESM, NCERT, New Delhi.

Acknowledgements are due to Professor M. Chandra, *Head*, Department of Education in Science and Mathematics for her support.

The Council acknowledges the efforts of the Computer Incharge, Deepak Kapoor; Rakesh Kumar, Kamlesh Rao and Sajjad Haider Ansari, D.T.P. Operators; Kushal Pal Singh Yadav, Copy Editor and Proof Readers, Mukhtar Hussain and Kanwar Singh.

The contribution of APC–Office, administration of DESM and Publication Department is also duly acknowledged.

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